EVERPURE®

claris | watertechnology

Claris Head Gen2

GB/US Installation and Operation Guide for Claris filter family

70.900.982/V1

EVERPURE® claris watertechnology

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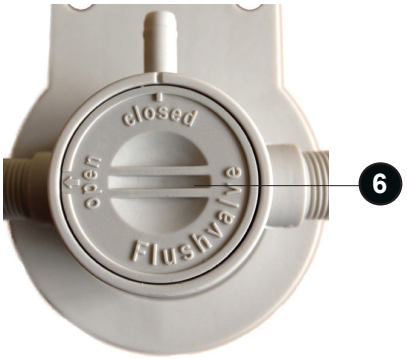

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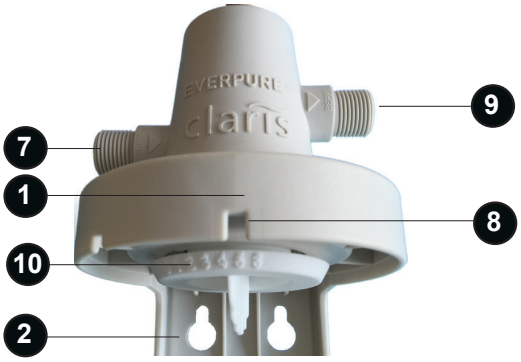

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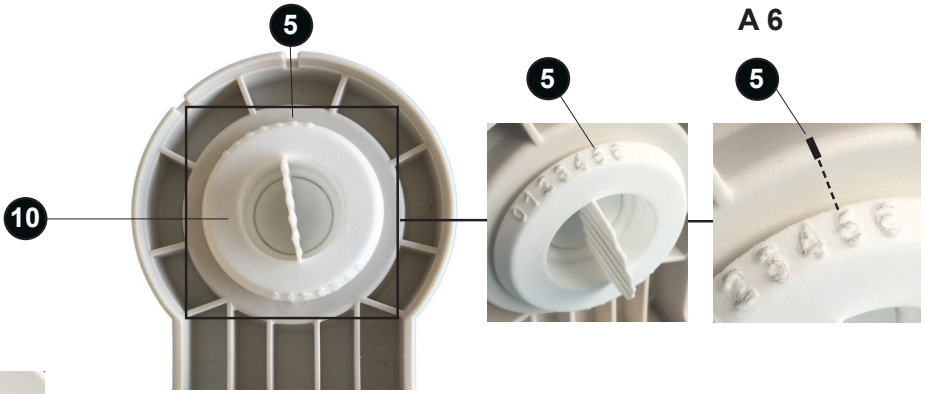

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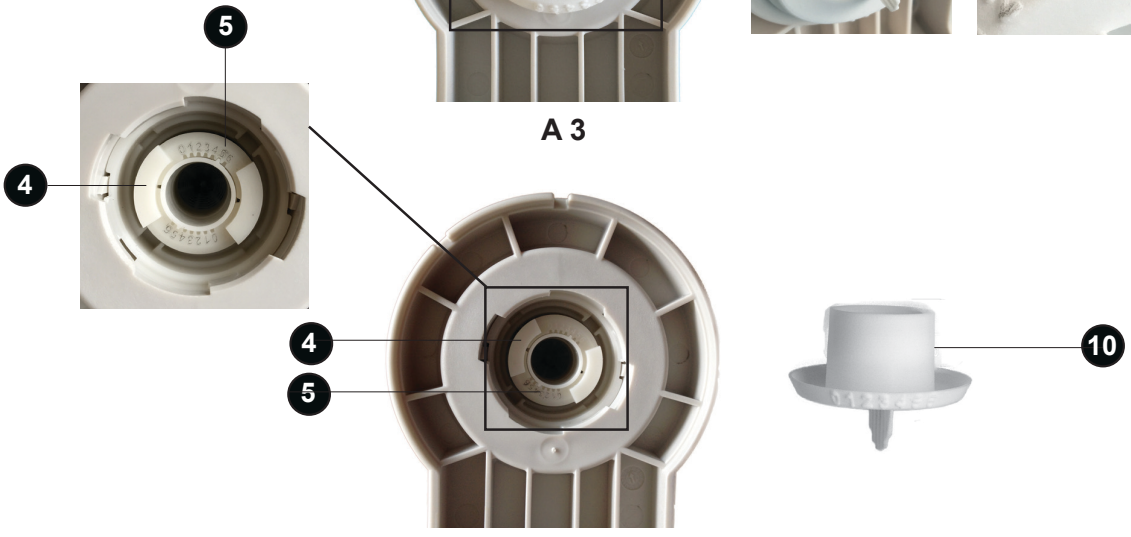

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1. General information

The filter system consists of the following parts (see page 3):
- Everpure Claris Head Gen2 with mounting bracket and bypass setting key
- Filter cartridge

The filter cartridges are available in different varieties and sizes:
- Everpure Claris: S, M, L, XL, XXL
- Everpure Claris ULTRA: 170, 250, 500, 1000, 1500, 2000
- Everpure Claris PRIME

The corresponding Generation II head fits to all Everpure Claris cartridges and sizes.

2. Operating and safety instructions

2.1 Staff
The installation and maintenance of the filter systems may only be carried out by trained and authorised personnel.

2.2 Disclaimer
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2.3 General safety instructions
- Only cold water of potable water quality may be used to feed the system.
- All components must be stored dry within a temperature limit of -15° to 45° C (5 °F to 113 °F)
- The system must be sited in a frost-proof place and be protected from direct sunlight.
- The system must not come into contact with chemicals, solvents or other vapours.
- Before commissioning the filter system, the fed appliance must be free of lime.
- The filter cartridge must not be opened or damaged.
- Regardless of the residual capacity, the filter cartridge must be replaced if not used for more than 4 weeks and if not flushed periodically with efficient volume (see table for flush volume).
- Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- After 5 years of use (latest 6 years after production date) the filter head and wall mounting bracket must be replaced (this also applies to hoses and gaskets) – please check the date on the production stamp.
- After a longer downtime or maintenance works rinse the system thoroughly – see table for flush volume.

Filter system	Flush volume after 1 week of stagnation	Flush volume after 4 weeks of stagnation
Claris S / ULTRA 170 / ULTRA 250	2 liters (0.5 US gal)	10 liters (3 US gal)
Claris M / ULTRA 500	3 liters (1.0 US gal)	15 liters (4 US gal)
Claris L / ULTRA 1000	5 liters (1.5 US gal)	25 liters (7 US gal)
Claris XL / ULTRA 1500	8 liters (2.0 US gal)	40 liters (11 US gal)
Claris XXL / ULTRA 2000 / Claris PRIME	12 liters (3.0 US gal)	60 liters (16 US gal)

2.4 Assembly safety instructions
- Water pressure at the filter system inlet must not exceed 8 bar (116 psi). A pressure reducer must be installed on the water supply side of the filter system if the inlet pressure exceeds 8 bar (116 psi).
- A shut-off valve must be installed upstream of the filter system.
- If a water softener is installed upstream, check if hardness is still available in the tapwater.
- No copper pipes, galvanised or nickel-coated pipes or intermediate parts may be installed between the filter system and the point of dispense.
- All components must be installed according to country-specific guidelines. Check for compliance with state and local laws and regulations.
- DIN 1988 should be noted for installing and operating the system.
- We recommend only using genuine accessory hoses for the Easy Head with 3/8“ BSP connection because these have a longer thread
- If the cartridge is removed from the filter head without being replaced by a new one, the water supply to the filter head must be shut off.
- Do not connect any devices to the flush valve and/or flush hose.
- Notice for espresso coffee and vending machines: If copper or nickel coated copper parts are used in installations their surfaces can migrate copper ions if in contact with water. Limestone coating deposits on contacting parts, such as pipes or boilers, can also impact the level of migration. To avoid the migration of copper ions in the water we recommend you avoid the use of copper or other nickel-coated copper materials. For installations which still consist mainly of copper, brass or nickel-coated copper surfaces, we recommend to use only the Claris ULTRA filter cartridge family or Claris PRIME.

3. Applications

The filter systems are typically used to feed the following appliances:

3.1 Claris ULTRA 170, 250, 500, 1000, 1500, 2000 cartridges:
- Coffee and espresso machines
- Drinks vending machines (also cold & hot combination machines)
- Ice machines

3.2 3.2 Claris S, M, L, XL, XXL and Claris PRIME:
- Combi - Steamers and Self-Cooking Systems with direct water injection
- Steam Cookers and Steam Ovens with boiler system
- Coffee and espresso machines
- Hot drinks vending machines

4. Function

The filter cartridges use ion-selective filter medium to reduce the carbonate hardness and the TDS of potable water. The DuoBlend® bypass valve in the filter head can be used to precisely adjust the carbonate hardness of the filtered water (with Claris PRIME cartridge to additionally adjust the Chloride, Fluoride, Sulphate and Sodium levels) to adapt it to the application and type of machinery.
The filter material also reduces heavy metal ions like lead*, copper* and cadmium*.
The integrated active carbon block reduces undesirable cloudiness*, organic impurities*, odour and taste and chlorine residue from the filtrate and bypass water.

* not performance tested or certified by NSF

5. Installation and Bypass level adjustment

5.1 Determining feed water quality parameters

5.1.1 Determining the carbonate hardness
Use the corresponding test kit to determine the carbonate hardness in the water supply. A test kit for determining water hardness is available as an accessory.

For Claris S to XXL and Claris ULTRA 170 to 2000 we recommend to add 2° KH / 2° Clarke / 30 PPM / 3° FH to the value determined in order to compensate measuring errors of the test kit and for fluctuations in the quality of feed water. For Claris PRIME use the exact measured carbonate hardness level. Use this value to determine the recommended bypass level setting according to chapter 5.2 and for the determination of the filter capacity according to chapter 5.3.

5.1.2
Determining the chloride concentration and TDS level
Only required for the bypass level setting and capacity determination of the Claris PRIME cartridge!

Use a corresponding test kit to determine the chloride level in the feed water or contact your local water supply company and ask for the chloride level in their supplied water.

Use a TDS or conductivity meter to determine the TDS in mg/l or the conductivity in µS/cm.
Use the chloride and the TDS/conductivity values in combination with the carbonate hardness level information to determine the recommended bypass level adjustment according to chapter 5.2 and for the determination of the filter capacity according to chapter 5.3

5.2 Bypass level setting
The unique DuoBlend® bypass valve technology enables precise adjustment of carbonate hardness and TDS (with Claris PRIME to additionally adjust chloride, fluoride, sulphate or sodium levels) in the filtered water. It is possible to adjust the bypass level to best suit the appliance type and application, i.e. hot drinks with steam (COFFEE-ESPRESSO), without steam (VENDING), Ice machines, as well as Combi Steamers or Steam Cookers.

The DuoBlend® bypass valve in the Everpure Claris Head Gen2 is preset to level 5 for the easy use in combination with Claris ULTRA filter cartridges for hot drinks applications. If used with the Claris ULTRA cartridge series for hot drinks applications, the bypass level 5 already fits to the carbonate hardness range of most common available feed water. Check appropriate level in chapter 9.

For Claris and Claris ULTRA only the carbonate hardness level is required to determine the specific bypass setting level and the capacity for specific appliances and applications.
For Claris PRIME the following 3 paramaters are required to determine the bypass setting level and the capacity: TDS/conductivity, carbonate hardness and chloride levels for specific appliances and applications.

To adjust the bypass level (see page 3, A 3 and A4) press down the bypass setting key (10) and turn the DuoBlend® bypass blending disc (4) to the level specified in the appropriate tables for Claris standard (chapter 9.1), for Claris ULTRA (chapter 9.2) and Claris PRIME (chapter 9.3).

After positioning the DuoBlend® bypass blending disc to the specified level, remove the bypass setting key (10) and hold in safekeeping for possible future DuoBlend® bypass resettings.

5.3 Determining the filter capacity

Based on the carbonate hardness level (for Claris PRIME in combination with the TDS/conductivity and chloride levels) of the water supply and on your application, use the tables in chapter 9 to identify the resultant filter cartridge volume capacity based on the recommended DuoBlend® bypass level.

Please mark the bypass setting value together with the installation and replacement dates in the corresponding boxes on the cartridge label.

5.4 Initial installation

At first identify a suitable place to install the filter system. Note the information provided in chapter 2.
Before you start installing the system, shut off the water supply and disconnect the equipment from the power supply.
Before installation check the filter system and the accessories for any damage – particular attention must be paid when inspecting the o-rings and gaskets.
After storage below 0° C (32 °F) the filter cartridge must be stored at the ambient temperature of the installation location for at least 24 hours.

NOTE: The hoses for the supply and discharge line are not supplied as standard but can be ordered as accessories. A test kit for determining the water hardness is also available as an accessory. You will find more details in section 8.

5.4.1 Installation of filter head / Mounting bracket / Filter cartridge

The system can be operated either free standing or wall mounted in a vertical or horizontal position.

1) If mounting vertically to a wall, securely connect the mounting bracket to the wall using suitable Ø 5mm screws (#10-12 x ¾" tap screws) (Not included).
   Please note: we recommend to install the Claris XXL/ULTRA 2000/Claris PRIME freestanding vertical or horizontal. If wall mounting of Claris XXL/ULTRA 2000/Claris PRIME is required first firmly attach an additional mounting block to the wall to allow adequate clearance between the filter cartridge and wall.
2) Install the hoses for the water inlet and outlet to the filter head and respect the following:
   • Note the direction of flow – indicated by arrows on the filter head!
   • Max. Torque 10 Nm (88 lbf in) on 3/8" BSP threaded connections when using genuine Claris accessory hoses.
   • Filter heads with 3/8" BSP threaded connections must only use connecting hoses with flat gaskets. Don't use hoses or adapter with conical screw for 3/8" BSP connections, they damage the connectors on the filter head and invalidate any warranty claims.
   Filter heads with 3/8" NPT threaded connections must only use connecting hoses with appropriate NPT connection. Don't use hoses or adapter with inappropriate connections, they damage the connectors on the filter head and invalidate any warranty claims.
   • Only use adaptor nipples of a matching connection type and length to the head connectors, adaptor nipples must not contact and rest axially on the head. Adaptors of improper design can damage the connections of the filter head and invalidate any warranty claims.
3) Open the flush/pressure release valve (see page 3, A 6) and direct the flush hose into a suitable container (e.g. bucket) or to the drain.
4) Turn on the water supply.
5) Insert the filter cartridge into the filter head and turn it clockwise until it stops and the end position is reached. This vents the system and flushes the filter cartridge.
   Flush filter type S,M > 5 l / 1.5 US gal; filter type L,XL > 10 l / 3.0 US gal; filter type XXL > 15 l / 4.0 US gal).
   Flush filter type ULTRA 170, 250, 500 > 10 l / 3 US gal; type ULTRA 1000, 1500 > 20 l / 6.0 US gal; type ULTRA 2000 / Claris PRIME > 30 l / 8.0 US gal).
   You can check the correct end position of the cartridge. The mark on the filter cartridge must aligne with the larger recession of the mounting bracket (see page 3, position 8).
6) Close the flush/pressure release valve (see page 3, A 5)
7) After first installation of the filter system the outlet hose and the appliance must flushed. Rinse and vent the hose and the appliance with a minimum of 2 litre (0.5 US gal). In cases where you can not flush the appliance, remove the hose from the appliance and rinse it separately.
8) The system is now ready for use. After installing the system and inserting the filter cartridge, check all components for leaks, water must not escape from any point.

5.5 Replacing a filter cartridge

1) Slowly unscrew the used cartridge by turning counter-clockwise. This will unlock it from the filter head and enable it to be removed. During this process, incoming tapwater supply and outgoing filtered water valves in the filter head shut-off automatically.
   The system will expand and a small amount of expansion water may escape from the flush hose due to peaks in pressure. Please keep this in mind and place a suitable container underneath the flush hose.
2) Open the flush/pressure release valve (see page 3, A 6) and lead the rinsing hose into a suitable container (e.g. bucket) or to the drain.
3) Remove the new filter cartridge from its packaging and check for any damage.
4) Insert the filter cartridge into the filter head and turn the cartridge clockwise until it stops and end position is reached (see page 3, position 8). The flow in the filter head is reopened and the system vented and flushed via the flush/ pressure release valve. Flush filter type S,M > 5 l / 1.5 US gal; filter type L,XL > 10 l / 3.0 US gal; filter type XXL > 15 l / 4.0 US gal).
   Flush filter type ULTRA 170, 250, 500 > 10 l / 3 US gal; type ULTRA 1000, 1500 > 20 l / 6.0 US gal; type ULTRA 2000 / Claris PRIME > 30 l / 8.0 US gal).
5) Close the flush/pressure release valve (see page 3, A 5) - the system is now ready for use.
6) After replacing the filter cartridge, check all components for seal integrity, water must not escape from any point.

NOTE: The flush water will be milky or cloudy at first. This is due to the dispersing air and will clear up quickly after flushing the cartridges with appropriate volume of water. Now check that the cartridge position is correct by ensuring the mark on the filter cartridge aligns with the larger recession of the wall mounting bracket (see page 3, position 8). When inserting the cartridge, check the position of the cartridge label. This should face forwards once in the end position so that all of the necessary information is visible.

6. Service / Maintenance

Reliable system function can only be achieved if the filter cartridge is replaced on a regular basis.
The replacement cycle depends on the carbonate hardness (for Claris PRIME on carbonate hardness and TDS/ conductivity) of the water supply, the application and the bypass level.
We would recommend replacing the filter cartridge after 6 months and no later than 12 months depending on usage.

The operator undertakes to check the system for leaks every day.

When the filter cartridge is replaced, all parts must be checked for impurities and damage. Damaged parts must be replaced and impurities remedied.

7. Technical data

7.1 Claris S-XXL

Dimensions		S	M	L	XL	XXL
Height, filter system	[mm]	365	475	410	525	525
Height, filter cartridge	[mm]	315	425	360	475	475
Diameter of filter cartridges	[mm]	95	95	136	136	175
Min. distance from ground	[mm]	40	40	40	40	40
Weight, filter cartridge	[kg]	1.3	1.8	3.2	4.3	6.5
Operating data						
Working pressure (non-shock)		2 - 8 bar (29 - 116 psi)				
Water temperature / ambient temperature		4° - 30° C (39 °F - 86 °F)				

Chlorine reduction
The Claris S to XXL cartridge family has been tested according to NSF/ANSI 42 for the reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for watering leaving the system, as specified in NSF/ANSI 42.

Substance	Influent challenge concentration	Reduction Requirement	Actual average reduction
Chlorine	2,0 mg/l	50%	89%

Capacity and Flow Rate Values used in Chlorine Reduction test for NSF/ANSI 42

Water filter Cartridge	S	M	L	XL	XXL
Rated Service flow l/min.	2,0	2,0	2,0	2,0	2,0
Rated Capacity Chlorine Reduction*	1‘700 l (450 US gal)	3‘000 l (790 US gal)	5‘600 l (1‘480 US gal)	8‘000 l (2‘120 US gal)	13‘200 l (3‘490 US gal)

*values based on carbonate hardness level 10° KH

Claris S to XXL cartridges are Tested and Certified by NSF International against NSF/ANSI Standard 42 for the reduction of Chlorine taste and odor

All of the materials used are safe for contact with drinking water.

7.2 Claris ULTRA 170-2000/Claris PRIME

Dimensions		170	250	500	1000	1500	2000/ Claris PRIME
Height, filter system	[mm]	295	365	475	410	525	525
Height, filter cartridge	[mm]	245	315	425	360	475	475
Diameter of filter cartridges	[mm]	95	95	95	136	136	175
Min. distance from ground	[mm]	40	40	40	40	40	40
Weight, filter cartridge	[kg]	0.9	1.3	1.8	3.2	4.3	6.5
Operating data							
Working pressure (non-shock)		2 - 8 bar (29 - 116 psi)					
Water temperature / ambient temperature		4° - 30° C (39 °F - 86 °F)					

8. Order information for Claris family

Claris		S	M	L	XL	XXL
Filter cartridges		4339-10	4339-11	4339-12	4339-13	4339-14

Claris ULTRA	170C	250C	500C	1000C	1500C	2000C
Filter cartridges	4339-85	4339-80	4339-81	4339-82	4339-83	4339-84

Claris PRIME	
Filter cartridges	4339-86

Accessoires

Head Gen2 3/8” BSP thread, in left/out right	4339-90
Head Gen2 3/8” NPT thread, in left/out right	4339-91
Head Gen2 3/8” QCF, in left/out right	4339-92
Head Gen2 8 mm QCF, in left/out right	4339-93
Flow Sensor with programming and display unit (3/8“) - liter version (up to 100l/h)	4339-30
Flow Sensor with programming and display unit (3/8“) - US gallon version (up to 26 USgal/h)	4339-31
Flow Sensor with programming and display unit (3/8“) - US gallon version (up to 184 USgal/h)	4339-32
Test kit for determining carbonate hardness	4339-40
Connection hose, 1500mm, 3/8“ x 3/8“ BSP connection, with flat gasket	4339-50
Connection hose, 1500mm, 3/8“ x 3/4“ BSP connection, with flat gasket	4339-51
Connection hose, 100 mm, 3/8“-3/4“ BSP (Set of 2)	4339-53

9. Settings and Capacities

9.1 Claris Standard S-XXL in liters

Combi Steamers / Self-Cooking Systems / Steam Cookers / Ovens

Direct Injection

°KH	°Clarke (GB)	PPM	°FH	Bypass-levels	capacity in liters S	M	L	XL	XXL
< 4	5	70	7	0	2‘250	3‘700	7‘000	10‘000	16‘500
5	6	90	9	0	1‘800	3‘000	5‘600	8‘000	13‘200
6	8	107	11	0	1'500	2'500	4'660	6'670	11'000
7	9	125	13	0	1'290	2'140	4'000	5'710	9'430
8	10	143	14	0	1'130	1'880	3'500	5'000	8'250
9	11	161	16	0	1'000	1'670	3'110	4'440	7'330
10	13	179	18	0	900	1'500	2'800	4'000	6'600
11	14	196	20	0	820	1'360	2'550	3'640	6'000
12	15	214	21	0	750	1'250	2'330	3'330	5'500
13	16	232	23	0	690	1'150	2'150	3'080	5'080
14	18	250	25	0	640	1'070	2'000	2'860	4'710
15	19	268	27	0	600	1'000	1'870	2'670	4'400
16	20	286	29	0	560	940	1'750	2'500	4'120
17	21	304	30	0	530	880	1'650	2'350	3'880
19	24	339	34	0	470	790	1'470	2'100	3'470
21	26	375	38	0	430	710	1'330	1'900	3'140
23	29	411	41	0	390	650	1'220	1'740	2'870
26	33	464	46	0	350	580	1'070	1'540	2'540
29	36	518	52	0	310	520	960	1'380	2'270
33	41	589	59	0	270	450	850	1'210	2'000
38	48	679	68	0	240	390	730	1'050	1'740

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Boiler System

°KH	°Clarke (GB)	PPM	°FH	Bypass-levels	capacity in liters S	M	L	XL	XXL
< 4	5	70	7	4	3‘200	5‘300	10‘000	14‘300	22‘000
5	6	90	9	4	2‘570	4‘290	8‘000	11‘500	17‘200
6	8	107	11	3	2'140	3'570	6'670	9'520	15'710
7	9	125	13	3	1'840	3'060	5'710	8'160	13'470
8	10	143	14	2	1'410	2'340	4'370	6'250	10'310
9	11	161	16	2	1'250	2'080	3'890	5'550	9'170
10	13	179	18	2	1'130	1'880	3'500	5'000	8'250
11	14	196	20	2	1'020	1'700	3'180	4'550	7'500
12	15	214	21	2	940	1'560	2'920	4'170	6'870
13	16	232	23	2	870	1'440	2'690	3'850	6'350
14	18	250	25	2	800	1'340	2'500	3'570	5'890
15	19	268	27	2	750	1'250	2'330	3'330	5'500
16	20	286	29	2	700	1'170	2'190	3'120	5'160
17	21	304	30	2	660	1'100	2'060	2'940	4'850
19	24	339	34	2	590	990	1'840	2'630	4'340
21	26	375	38	1	480	790	1'480	2'120	3'490
23	29	411	41	1	430	720	1'350	1'930	3'190
26	33	464	46	1	380	640	1'200	1'710	2'820
29	36	518	52	1	340	570	1'070	1'530	2'530
33	41	589	59	1	300	510	940	1'340	2'220
38	48	679	68	1	260	440	820	1'170	1'930

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Coffee and Vending machines

Coffee-Espresso

°KH	°Clarke (GB)	PPM	°FH	Bypass-levels	capacity in liters S	M	L	XL	XXL
< 4	5	70	7	6	4‘500	7‘500	14‘000	20‘000	33‘000
5	6	90	9	6	3‘600	6‘000	11‘000	16‘000	27‘000
6	8	107	11	5	3'000	5'000	9'200	13'200	22'000
7	9	125	13	5	2'570	4'280	7'890	11'310	18'860
8	10	143	14	4	1'870	3'120	5'750	8'250	13'750
9	11	161	16	4	1'670	2'780	5'110	7'330	12'220
10	13	179	18	4	1'500	2'500	4'600	6'600	11'000
11	14	196	20	4	1'360	2'270	4'180	6'000	10'000
12	15	214	21	3	1'070	1'790	3'290	4'710	7'860
13	16	232	23	3	990	1'650	3'030	4'350	7'250
14	18	250	25	3	920	1'530	2'820	4'040	6'730
15	19	268	27	3	860	1'430	2'630	3'770	6'290
16	20	286	29	3	800	1'340	2'470	3'540	5'890
17	21	304	30	3	760	1'260	2'320	3'330	5'550
19	24	339	34	3	680	1'130	2'070	2'980	4'960
21	26	375	38	2	540	890	1'640	2'360	3'930
23	29	411	41	2	490	810	1'500	2'150	3'590
26	33	464	46	2	430	720	1'330	1'900	3'170
29	36	518	52	2	390	650	1'190	1'710	2'840
33	41	589	59	2	340	570	1'040	1'500	2'500
38	48	679	68	2	300	490	910	1'300	2'170

The COFFEE-ESPRESSO application describes the production of hot drinks with steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Vending

°KH	°Clarke (GB)	PPM	°FH	Bypass-levels	capacity in liters S	M	L	XL	XXL
< 4	5	70	7	6	5‘310	9‘300	17‘500	25‘000	41‘000
5	6	90	9	6	4‘250	7‘500	14‘000	20‘000	33‘000
6	8	107	11	6	3'540	6'250	11'670	16'670	27'500
7	9	125	13	6	3'040	5'360	10'000	14'280	23'570
8	10	143	14	5	2'120	3'750	7'000	10'000	16'500
9	11	161	16	5	1'890	3'330	6'220	8'890	14'670
10	13	179	18	5	1'700	3'000	5'600	8'000	13'200
11	14	196	20	5	1'550	2'730	5'090	7'270	12'000
12	15	214	21	4	1'180	2'080	3'890	5'550	9'170
13	16	232	23	4	1'090	1'920	3'590	5'130	8'460
14	18	250	25	4	1'010	1'790	3'330	4'760	7'860
15	19	268	27	4	940	1'670	3'110	4'440	7'330
16	20	286	29	4	880	1'560	2'920	4'170	6'880
17	21	304	30	4	830	1'470	2'750	3'920	6'470
19	24	339	34	4	750	1'320	2'460	3'510	5'790
21	26	375	38	3	580	1'020	1'900	2'720	4'490
23	29	411	41	3	530	930	1'740	2'480	4'100
26	33	464	46	3	470	820	1'540	2'200	3'630
29	36	518	52	3	420	740	1'380	1'970	3'250
33	41	589	59	3	370	650	1'210	1'730	2'860
38	48	679	68	3	320	560	1'050	1‘500	2'480

The VENDING application describes the production of hot drinks without steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Claris Standard S-XXL in gallons (US)

Combi Steamers / Self-Cooking Systems / Steam Cookers / Ovens

Direct Injection

°KH	Grains (US)	PPM	°FH	Bypass-levels	capacity in US gal S	M	L	XL	XXL
< 4	4	70	7	0	600	980	1‘850	2‘640	4‘360
5	5	90	9	0	470	790	1‘480	2‘110	3‘490
6	6	107	11	0	400	660	1'230	1'760	2'910
7	7	125	13	0	340	560	1'060	1'510	2'490
8	8	143	14	0	300	500	930	1'320	2'180
9	9	161	16	0	260	440	820	1'170	1'940
10	10	179	18	0	240	400	740	1'060	1'740
11	11	196	20	0	220	360	670	960	1'580
12	12	214	21	0	200	330	620	880	1'450
13	14	232	23	0	180	300	570	810	1'340
14	15	250	25	0	170	280	530	760	1'240
15	16	268	27	0	160	260	490	700	1'160
16	17	286	29	0	150	250	460	660	1'090
17	18	304	30	0	140	230	440	620	1'020
19	20	339	34	0	120	210	390	560	920
21	22	375	38	0	110	190	350	500	830
23	24	411	41	0	100	170	320	460	760
26	27	464	46	0	90	150	280	410	670
29	30	518	52	0	80	140	250	370	600
33	34	589	59	0	70	120	230	320	530
38	40	679	68	0	60	100	190	280	460

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Boiler System

°KH	Grains (US)	PPM	°FH	Bypass-levels	capacity in US gal S	M	L	XL	XXL
< 4	4	70	7	4	850	1‘400	2‘640	3‘780	5‘810
5	5	90	9	4	680	1‘130	2‘110	3‘030	4‘540
6	6	107	11	3	570	940	1'760	2'520	4'150
7	7	125	13	3	490	810	1'510	2'160	3'560
8	8	143	14	2	370	620	1'160	1'650	2'720
9	9	161	16	2	330	550	1'030	1'470	2'420
10	10	179	18	2	300	500	930	1'320	2'180
11	11	196	20	2	270	450	840	1'200	1'980
12	12	214	21	2	250	410	770	1'100	1'810
13	14	232	23	2	230	380	710	1'020	1'680
14	15	250	25	2	210	350	660	940	1'560
15	16	268	27	2	200	330	620	880	1'450
16	17	286	29	2	190	310	580	820	1'360
17	18	304	30	2	170	290	540	780	1'280
19	20	339	34	2	160	260	490	700	1'150
21	22	375	38	1	130	210	390	560	920
23	24	411	41	1	110	190	360	510	840
26	27	464	46	1	100	170	320	450	740
29	30	518	52	1	90	150	280	400	670
33	34	589	59	1	80	140	250	350	590
38	40	679	68	1	70	120	220	310	510

Capacities are intended as guidelines and can vary according the machine typ. Please contact us for recommendations.

Coffee and Vending machines

Coffee-Espresso

°KH	Grains (US)	PPM	°FH	Bypass-levels	capacity in US gal S	M	L	XL	XXL
< 4	4	70	7	6	1‘190	1‘980	3‘700	5‘290	8‘720
5	5	90	9	6	950	1‘600	2‘900	4‘230	7‘130
6	6	107	11	5	790	1'320	2'430	3'490	5'810
7	7	125	13	5	680	1'130	2'100	2'990	4'980
8	8	143	14	4	490	820	1'520	2'180	3'630
9	9	161	16	4	440	730	1'350	1'940	3'230
10	10	179	18	4	400	660	1'220	1'740	2'910
11	11	196	20	4	360	600	1'100	1'590	2'640
12	12	214	21	3	280	470	870	1'240	2'080
13	14	232	23	3	260	440	800	1'150	1'920
14	15	250	25	3	240	400	750	1'070	1'780
15	16	268	27	3	230	380	700	1'000	1'660
16	17	286	29	3	210	350	650	940	1'560
17	18	304	30	3	200	330	610	880	1'470
19	20	339	34	3	180	300	550	790	1'310
21	22	375	38	2	140	240	430	620	1'040
23	24	411	41	2	130	210	400	570	950
26	27	464	46	2	110	190	350	500	840
29	30	518	52	2	100	170	310	450	750
33	34	589	59	2	90	150	280	400	660
38	40	679	68	2	80	130	240	340	570

The COFFEE-ESPRESSO application describes the production of hot drinks with steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Vending

°KH	Grains (US)	PPM	°FH	Bypass-levels	capacity in US gal S	M	L	XL	XXL
< 4	4	70	7	6	1‘300	2‘280	4‘230	6‘080	10‘050
5	5	90	9	6	1‘070	1‘900	3‘540	5‘300	8‘500
6	6	107	11	6	940	1'650	3'090	4'400	7'270
7	7	125	13	6	800	1'420	2'640	3'770	6'230
8	8	143	14	5	560	990	1'850	2'650	4'360
9	9	161	16	5	500	880	1'640	2'350	3'880
10	10	179	18	5	450	790	1'480	2'120	3'490
11	11	196	20	5	410	720	1'350	1'920	3'170
12	12	214	21	4	310	550	1'030	1'470	2'420
13	14	232	23	4	290	510	950	1'360	2'240
14	15	250	25	4	270	470	880	1'260	2'080
15	16	268	27	4	250	440	820	1'170	1'940
16	17	286	29	4	230	410	770	1'100	1'820
17	18	304	30	4	220	390	700	1'040	1'710
19	20	339	34	4	200	350	650	930	1'530
21	22	375	38	3	150	270	500	720	1'190
23	24	411	41	3	140	250	460	660	1'080
26	27	464	46	3	120	220	410	580	960
29	30	518	52	3	110	200	370	520	860
33	34	589	59	3	100	170	320	460	760
38	40	679	68	3	90	150	280	350	660

The VENDING application describes the production of hot drinks without steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

9.2 Claris ULTRA 170-2000

Vending and Ice machines

°KH	°Clarke	Grains (US)	PPM	°FH	Bypass-level	capacity in liters						capacity in US gal					
						170	250	500	1000	1500	2000	170	250	500	1000	1500	2000
< 4	5	4	70	7	6	3‘920	5‘770	9‘620	17‘500	25‘000	41‘250	1‘040	1‘520	2‘540	4‘620	6‘610	10‘900
5	6	5	90	9	6	3‘220	4‘740	7‘890	15‘560	22‘220	36‘670	850	1‘250	2‘090	4‘110	5‘870	9‘690
6	8	6	107	11	6	2'830	4'170	6'940	14'140	20'200	33'330	750	1'100	1'830	3'740	5'340	8'810
7	9	7	125	13	6	2'430	3'570	5'950	12'120	17'320	28'570	640	940	1'570	3'200	4'570	7'550
8	10	8	143	14	6	2'130	3'130	5'210	10'610	15'150	25'000	560	830	1'380	2'800	4'000	6'610
9	11	9	161	16	6	1'890	2'780	4'630	9'430	13'470	22'220	500	730	1'220	2'490	3'560	5'870
10	13	10	179	18	6	1'700	2'500	4'200	8'500	12'100	20'000	450	660	1'100	2'240	3'200	5'280
11	14	11	196	20	6	1'550	2'270	3'790	7'710	11'020	18'180	410	600	1'000	2'040	2'910	4'800
12	15	12	214	21	6	1'280	1'880	3'130	6'480	9'260	15'280	340	500	830	1'710	2'450	4'040
13	16	14	232	23	6	1'180	1'730	2'880	5'980	8'550	14'100	310	460	760	1'580	2'260	3'730
14	18	15	250	25	6	1'090	1'610	2'680	5'560	7'940	13'100	290	420	710	1'470	2'100	3'460
15	19	16	268	27	6	1'020	1'500	2'500	5'190	7'410	12'220	270	400	660	1'370	1'960	3'230
16	20	17	286	29	6	960	1'410	2'340	4'860	6'940	11'460	250	370	620	1'280	1'830	3'030
17	21	18	304	30	6	900	1'320	2'210	4'580	6'540	10'780	240	350	580	1'210	1'730	2'850
19	24	20	339	34	6	810	1'180	1'970	4'090	5'850	9'650	210	310	520	1'080	1'550	2'550
21	26	22	375	38	6	730	1'070	1'790	3'600	5'150	8'490	190	280	470	950	1'360	2'240
23	29	24	411	41	6	670	980	1'630	3'040	4'350	7'170	180	260	430	800	1'150	1'900
26	33	27	464	46	5	500	740	1'230	2'390	3'420	5'640	130	190	320	630	900	1'490
29	36	30	518	52	5	440	650	1'080	2'010	2'870	4'740	120	170	280	530	760	1'250
33	41	34	589	59	5	370	550	910	1'700	2'420	4'000	100	140	240	450	640	1'060
36	48	40	679	68	5	340	500	830	1'560	2'220	3'670	90	130	220	410	590	970

The COFFEE-ESPRESSO application describes the production of hot drinks with steam operation and VENDING without steam operation. The stated capacities are intended as guidelines for single cup dispense. The capacities may vary according to dispensed volume and machine type. Please contact us for recommendations.

Coffee-Espresso

°KH	°Clarke	Grains (US)	PPM	°FH	Bypass-level	capacity in liters						capacity in US gal					
						170	250	500	1000	1500	2000	170	250	500	1000	1500	2000
< 4	5	4	70	7	6	3‘330	5‘000	8‘330	16‘670	23‘810	39‘290	880	1‘320	2‘200	4‘400	6‘290	10‘380
5	6	5	90	9	6	2‘860	4‘290	7‘140	15‘140	21‘620	35‘680	750	1‘130	1‘890	4‘000	5‘710	9‘430
6	8	6	107	11	6	2'500	3'750	6'250	14'140	20'200	33'330	660	990	1'650	3'740	5'340	8'810
7	9	7	125	13	6	2'140	3'210	5'360	12'120	17'320	28'570	570	850	1'420	3'200	4'570	7'550
8	10	8	143	14	6	1'880	2'810	4'690	8'750	12'500	20'630	500	740	1'240	2'310	3'300	5'450
9	11	9	161	16	6	1'670	2'500	4'170	7'780	11'110	18'330	440	660	1'100	2'050	2'940	4'840
10	13	10	179	18	6	1'500	2'250	3'750	7'000	10'000	16'500	400	590	990	1'850	2'640	4'360
11	14	11	196	20	6	1'360	2'050	3'410	6'360	9'090	15'000	360	540	900	1'680	2'400	3'960
12	15	12	214	21	5	1'060	1'600	2'660	5'190	7'410	12'220	280	420	700	1'370	1'960	3'230
13	16	14	232	23	5	980	1'470	2'450	4'790	6'840	11'280	260	390	650	1'260	1'810	2'980
14	18	15	250	25	5	910	1'370	2'280	4'440	6'350	10'480	240	360	600	1'170	1'680	2'770
15	19	16	268	27	5	850	1'280	2'130	4'150	5'930	9'780	220	340	560	1'100	1'570	2'580
16	20	17	286	29	5	780	1'170	1'950	3'720	5'320	8'780	210	310	520	980	1'410	2'320
17	21	18	304	30	5	740	1'100	1'840	3'500	5'010	8'260	190	290	490	930	1'320	2'180
19	24	20	339	34	5	660	990	1'640	3'140	4'480	7'390	170	260	430	830	1'180	1'950
21	26	22	375	38	5	570	860	1'430	2'670	3'810	6'290	150	230	380	700	1'010	1'660
23	29	24	411	41	5	520	780	1'300	2'430	3'480	5'740	140	210	340	640	920	1'520
26	33	27	464	46	5	460	690	1'150	2'150	3'080	5'080	120	180	300	570	810	1'340
29	36	30	518	52	4	340	520	860	1'610	2'300	3'790	90	140	230	430	610	1'000
33	41	34	589	59	4	300	450	760	1'410	2'020	3'330	80	120	200	370	530	880
36	48	40	679	68	4	280	420	690	1'300	1'850	3'060	70	110	180	340	490	810

9.3 Claris PRIME

Settings and Capacities		Capacity in Liter							Capacity in US Gallon						
		Hot Drinks and Ice Machines						Combi Steamer	Hot Drinks and Ice Machines						Combi Steamer
TDS Feed Water < 150 ppm (<250 µS/cm)	Chloride Level feed water (ppm)	< 70	< 100	< 140	< 200	< 300		< 200	< 300	<70	<100	<140	< 200	< 300	<200	<300
	Bypass setting	6	5	4	3	2		1	0	6	5	4	3	2	1	0
	Carbonate Hardness °KH															
	2-3	6000	4800	4000	3430	3000		2670	2400	1.590	1.270	1.060	910	790	700	630
	4-5	8500	6800	5670	4860	4250		3780	3400	2250	1800	1500	1280	1120	1000	900
	> 5	9500	7600	6330	5430	4750		4220	3800	2.510	2.010	1.670	1.430	1.250	1120	1000
TDS Feed Water 150 - 300 ppm (250 - 500 µS/cm)	Chloride Level feed water (ppm)	< 70	< 100	< 140	< 200	< 300		< 200	< 300	<70	<100	<140	< 200	< 300	<200	<300
	Bypass setting	6	5	4	3	2		1	0	6	5	4	3	2	1	0
	Carbonate Hardness °KH															
	2-3	2630	2100	1750	1500	1310		1170	1050	690	550	460	400	350	310	280
	4-5	3000	2400	2000	1710	1500		1330	1200	790	630	530	450	400	350	320
	6-7	3500	2800	2330	2000	1750		1560	1400	920	740	620	530	460	410	370
	8-9	4250	3400	2830	2430	2130		1890	1700	1120	900	750	640	560	500	450
	> 9	4750	3800	3170	2710	2380		2110	1900	1.250	1.000	840	720	630	560	500
TDS Feed Water 300 to 450 ppm (500 - 750 µS/cm)	Chloride Level feed water (ppm)	< 70	< 100	< 140	< 200	< 300		< 200	< 300	<70	<100	<140	< 200	< 300	<200	<300
	Bypass setting	6	5	4	3	2		1	0	6	5	4	3	2	1	0
	Carbonate Hardness °KH															
	2-3	1750	1400	1170	1000	880		780	700	460	370	310	260	230	210	180
	4-5	1880	1500	1250	1070	940		830	750	500	400	330	280	250	220	200
	6-7	2000	1600	1330	1140	1000		890	800	530	420	350	300	260	230	210
	8-9	2250	1800	1500	1290	1130		1000	900	590	480	400	340	300	260	240
	10-11	2500	2000	1670	1430	1250		1110	1000	660	530	440	380	330	290	260
	12-13	2880	2300	1920	1640	1440		1280	1150	760	610	510	430	380	340	300
	>13	3250	2600	2170	1860	1630		1440	1300	860	690	570	490	430	380	340
TDS Feed Water 450 to 600 ppm (750 - 1000 µS/cm)	Chloride Level feed water (ppm)	< 70	< 100	< 140	< 200	< 300		< 200	< 300	<70	<100	<140	< 200	< 300	<200	<300
	Bypass setting	6	5	4	3	2		1	0	6	5	4	3	2	1	0
	Carbonate Hardness °KH															
	2-5	1250	1000	830	710	630		560	500	330	260	220	190	170	150	130
	6-8	1380	1100	920	790	690		610	550	360	290	240	210	180	160	150
	9-11	1630	1300	1080	930	810		720	650	430	340	290	250	210	190	170
	12-13	1750	1400	1170	1000	880		780	700	460	370	310	260	230	210	180
	14-15	2000	1600	1330	1140	1000		890	800	530	420	350	300	260	230	210
	16-17	2130	1700	1420	1210	1060		940	850	560	450	370	320	280	250	220
	18-19	2380	1900	1580	1360	1190		1060	950	630	500	420	360	310	280	250
	>19	2500	2000	1670	1430	1250		1110	1000	660	530	440	380	330	290	260

Determine the appropriate bypass setting and capacity by indicating the maximum TDS, carbonate hardness and Chloride level of the feed water in the table. The stated bypass settings and capacities for hot drinks, Ice Cube machines and combi steamers are intended as guidelines and may vary according to machine type. Please contact us for recommendation.

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